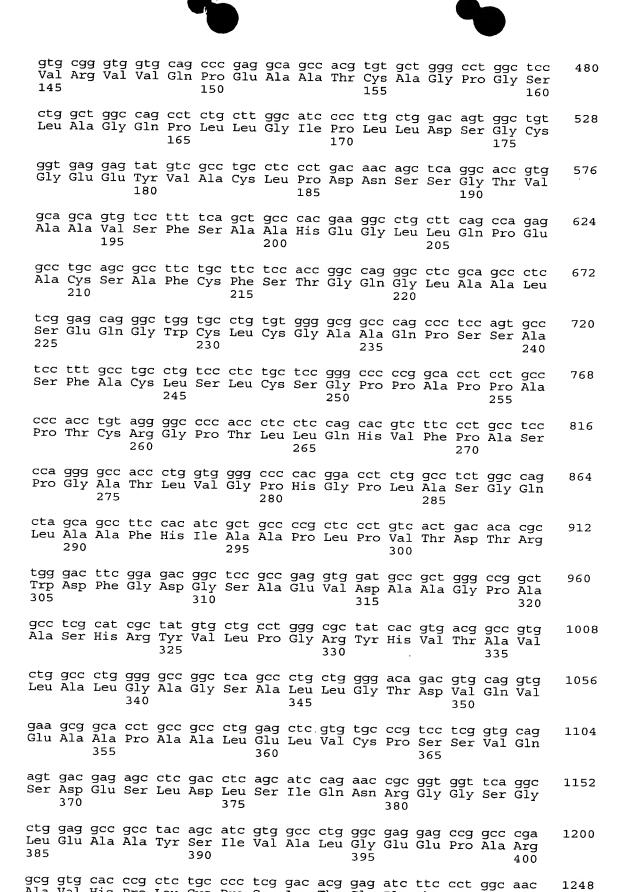
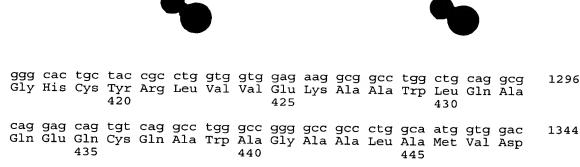
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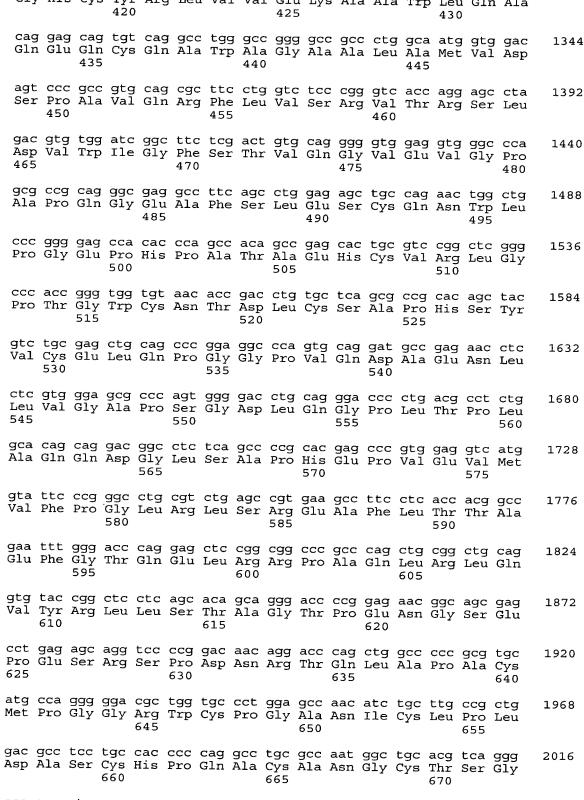
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410

Ala Val His Pro Leu Cys Pro Ser Asp Thr Glu Ile Phe Pro Gly Asn





cca ggg cta ccc ggg gcc ccc tat gcg cta tgg aga gag ttc ctc ttc 2064 Pro Gly Leu Pro Gly Ala Pro Tyr Ala Leu Trp Arg Glu Phe Leu Phe





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Tyr	aac Asn 1010	gta Val	acc Thr	gtg Val	Glu	cgg Arg 1015	atg Met	aac Asn	agg Arg	atg Met	cag Gln 1020	ggt Gly	ctg Leu	cag Gln	gtc Val	3072
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		Asp					Leu			ttc Phe		Pro				3216
gag Glu	Ser	ttc Phe L075	cca Pro	gtt Val	cca Pro	Asp	ccc Pro L080	tcg Ser	gtg Val	gcc Ala	Gln	gtg Val L085	ctg Leu	gtg Val	gag Glu	3264
His	aat Asn 090	gtc Val	acg Thr	cac His	Thr	tac Tyr 1095	gct Ala	gcc Ala	cca Pro	ggt Gly 1	gag Glu L100	tac Tyr	ctc Leu	ctg Leu	acc Thr	3312
	Leu			Asn					Leu	acg Thr 1115				Pro		3360
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ggc cac ctg gcc cgg agc Gly His Leu Ala Arg Ser 1285	ctg cac gtg control Leu His Val Lou 12	eu vai Phe vai bec	g gag gtg 3888 1 Glu Val 1295
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cgt gcc agg ggc cct gag Arg Ala Arg Gly Pro Gli 1425 1430	. Val Thr Phe l	atc tac cga gac co Ile Tyr Arg Asp Pr 1435	a ggc tcc 4320 o Gly Ser 1440
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tca gcc ctg gtg gag gtg Ser Ala Leu Val Glu Val 1460	g cag gag ccc g Gln Glu Pro V 1465	gtg ctg gtc acc ag Val Leu Val Thr Se 147	it the map
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teg etg gte ate etg teg gge ege gae gte ace tae aeg eee gtg gee





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ctg tcc ccc aac cgc ccg ccg ctg ggg ggc tct tgc cgc ctc ttc cca Leu Ser Pro Asn Arg Pro Pro Leu Gly Gly Ser Cys Arg Leu Phe Pro 2465 2470 2475 2480	7440
ctg ggc gct gtg cac gcc ctc acc acc aag gtg cac ttc gaa tgc acg Leu Gly Ala Val His Ala Leu Thr Thr Lys Val His Phe Glu Cys Thr 2485 2490 2495	7488
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ccc Pro	aac Asn	ggc Gly	ago Ser 2580	Ala	acg Thr	Gly aaa	Leu	aca Thr 2585	gtc Val	tgg Trp	ctg Leu	His	999 Gly 2590	Leu	acc Thr	7776
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He	gag Glu 2610	. Tyr	tcg Ser	ttg Leu	Ala	ctg Leu 2615	gtc Val	acc Thr	gtg Val	Leu	aac Asn 2620	gag Glu	tac Tyr	gag Glu	cgg Arg	7872
gcc Ala 262	Leu	gac Asp	gtg Val	Ala	gca Ala 2630	gag Glu	ccc Pro	aag Lys	His	gag Glu 2635	cgg Arg	cag Gln	cac His	Arg	gcc Ala 2640	7920
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cgg ctg gcc tca gag cgc gcc atc acc gtg aag gtg ccc aac aac tcg Arg Leu Ala Ser Glu Arg Ala Ile Thr Val Lys Val Pro Asn Asn Ser 2865 2870 2875 2880	8640
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gtt gtg gtc cag ccc cag gcc tcc gtc ggt gct gtg gtc acc ctg gac { Val Val Val Gln Pro Gln Ala Ser Val Gly Ala Val Val Thr Leu Asp 2900 2905 2910	3736
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ggc ctg tac acg tcc ctg tgc cag tac ttc agc gag gag gac atg gtg 90 Gly Leu Tyr Thr Ser Leu Cys Gln Tyr Phe Ser Glu Glu Asp Met Val 3010 3015 3020)72
tgg cgg aca gag ggg ctg ctg ccc ctg gag gag acc tcg ccc cgc cag 91 Trp Arg Thr Glu Gly Leu Leu Pro Leu Glu Glu Thr Ser Pro Arg Gln 3025 3030 3035 3040	.20
gcc gtc tgc ctc acc cgc cac ctc acc gcc ttc ggc gcc agc ctc ttc 91 Ala Val Cys Leu Thr Arg His Leu Thr Ala Phe Gly Ala Ser Leu Phe 3045 3050 3055	68
gtg ccc cca agc cat gtc cgc ttt gtg ttt cct gag ccg aca gcg gat 92 Val Pro Pro Ser His Val Arg Phe Val Phe Pro Glu Pro Thr Ala Asp 3060 3065 3070	16
gta aac tac atc gtc atg ctg aca tgt gct gtg tgc ctg gtg acc tac 92 Val Asn Tyr Ile Val Met Leu Thr Cys Ala Val Cys Leu Val Thr Tyr 3075 3080 3085	64
atg gtc atg gcc gcc atc ctg cac aag ctg gac cag ttg gat gcc agc 93:	12





Met Val Met Ala Ala Ile Leu His Lys Leu Asp Gln Leu Asp Ala Ser 3090 3095 3100	
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gag atc ctc gtc aag aca ggc tgg ggc cgg ggc tca ggt acc acg gcc 940 Glu Ile Leu Val Lys Thr Gly Trp Gly Arg Gly Ser Gly Thr Thr Ala 3125 3130 3135	8(
cac gtg ggc atc atg ctg tat ggg gtg gac agc cgg agc ggc cac cgg 945 His Val Gly Ile Met Leu Tyr Gly Val Asp Ser Arg Ser Gly His Arg 3140 3145 3150	56
cac ctg gac ggc gac aga gcc ttc cac cgc aac agc ctg gac atc ttc 950 His Leu Asp Gly Asp Arg Ala Phe His Arg Asn Ser Leu Asp Ile Phe 3155 3160 3165)4
cgg atc gcc acc ccg cac agc ctg ggt agc gtg tgg aag atc cga gtg 955 Arg Ile Ala Thr Pro His Ser Leu Gly Ser Val Trp Lys Ile Arg Val 3170 3175 3180	52
tgg cac gac aac aaa ggg ctc agc cct gcc tgg ttc ctg cag cac gtc 960 Trp His Asp Asn Lys Gly Leu Ser Pro Ala Trp Phe Leu Gln His Val 3185 3190 3195 3200)0
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tcc agc gtg gtt gtc tat ccc gtc tac ctg gcc atc ctt ttt ctc ttc Ser Ser Val Val Val Tyr Pro Val Tyr Leu Ala Ile Leu Phe Leu Phe 3330 3335 3340	032
cgg atg tcc cgg agc aag gtg gct ggg agc ccg agc ccc aca cct gcc 100 Arg Met Ser Arg Ser Lys Val Ala Gly Ser Pro Ser Pro Thr Pro Ala 3345 3350 3355 3360	080





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Leu Pro Ser Arg Ser Ser Arg Gly Ser Lys Val Ser Pro Asp Val Pro 4165 4170 4175	
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Cys Glu Pro Pro Cys Leu Cys Gly Pro Ala Pro Gly Ala Ala Cys Arg 35 40 45	
Val Asn Cys Ser Gly Arg Gly Leu Arg Thr Leu Gly Pro Ala Leu Arg 50 60	
Ile Pro Ala Asp Ala Thr Glu Leu Asp Val Ser His Asn Leu Leu Arg 65 70 75 80	
Ala Leu Asp Val Gly Leu Leu Ala Asn Leu Ser Ala Leu Ala Glu Leu 85 90 95	
Asp Ile Ser Asn Asn Lys Ile Ser Thr Leu Glu Glu Gly Ile Phe Ala	
100 105 110	

Cys Asp Cys Gly Leu Ala Trp Leu Pro Gln Trp Ala Glu Glu Gln Gln



130 135 140

Val Arg Val Val Gln Pro Glu Ala Ala Thr Cys Ala Gly Pro Gly Ser 150 155 Leu Ala Gly Gln Pro Leu Leu Gly Ile Pro Leu Leu Asp Ser Gly Cys 165 Gly Glu Glu Tyr Val Ala Cys Leu Pro Asp Asn Ser Ser Gly Thr Val 185 Ala Ala Val Ser Phe Ser Ala Ala His Glu Gly Leu Leu Gln Pro Glu 200 Ala Cys Ser Ala Phe Cys Phe Ser Thr Gly Gln Gly Leu Ala Ala Leu Ser Glu Gln Gly Trp Cys Leu Cys Gly Ala Ala Gln Pro Ser Ser Ala Ser Phe Ala Cys Leu Ser Leu Cys Ser Gly Pro Pro Ala Pro Pro Ala Pro Thr Cys Arg Gly Pro Thr Leu Leu Gln His Val Phe Pro Ala Ser 265 Pro Gly Ala Thr Leu Val Gly Pro His Gly Pro Leu Ala Ser Gly Gln 280 Leu Ala Ala Phe His Ile Ala Ala Pro Leu Pro Val Thr Asp Thr Arg Trp Asp Phe Gly Asp Gly Ser Ala Glu Val Asp Ala Ala Gly Pro Ala Ala Ser His Arg Tyr Val Leu Pro Gly Arg Tyr His Val Thr Ala Val Leu Ala Leu Gly Ala Gly Ser Ala Leu Leu Gly Thr Asp Val Gln Val Glu Ala Ala Pro Ala Ala Leu Glu Leu Val Cys Pro Ser Ser Val Gln Ser Asp Glu Ser Leu Asp Leu Ser Ile Gln Asn Arg Gly Gly Ser Gly Leu Glu Ala Ala Tyr Ser Ile Val Ala Leu Gly Glu Glu Pro Ala Arg 395 Ala Val His Pro Leu Cys Pro Ser Asp Thr Glu Ile Phe Pro Gly Asn 410 Gly His Cys Tyr Arg Leu Val Val Glu Lys Ala Ala Trp Leu Gln Ala Gln Glu Gln Cys Gln Ala Trp Ala Gly Ala Ala Leu Ala Met Val Asp Ser Pro Ala Val Gln Arg Phe Leu Val Ser Arg Val Thr Arg Ser Leu 455 Asp Val Trp Ile Gly Phe Ser Thr Val Gln Gly Val Glu Val Gly Pro Ala Pro Gln Gly Glu Ala Phe Ser Leu Glu Ser Cys Gln Asn Trp Leu 490





Pro Gly Glu Pro His Pro Ala Thr Ala Glu His Cys Val Arg Leu Gly Pro Thr Gly Trp Cys Asn Thr Asp Leu Cys Ser Ala Pro His Ser Tyr 520 Val Cys Glu Leu Gln Pro Gly Gly Pro Val Gln Asp Ala Glu Asn Leu Leu Val Gly Ala Pro Ser Gly Asp Leu Gln Gly Pro Leu Thr Pro Leu Ala Gln Gln Asp Gly Leu Ser Ala Pro His Glu Pro Val Glu Val Met 570 Val Phe Pro Gly Leu Arg Leu Ser Arg Glu Ala Phe Leu Thr Thr Ala Glu Phe Gly Thr Gln Glu Leu Arg Arg Pro Ala Gln Leu Arg Leu Gln Val Tyr Arg Leu Leu Ser Thr Ala Gly Thr Pro Glu Asn Gly Ser Glu Pro Glu Ser Arg Ser Pro Asp Asn Arg Thr Gln Leu Ala Pro Ala Cys Met Pro Gly Gly Arg Trp Cys Pro Gly Ala Asn Ile Cys Leu Pro Leu Asp Ala Ser Cys His Pro Gln Ala Cys Ala Asn Gly Cys Thr Ser Gly Pro Gly Leu Pro Gly Ala Pro Tyr Ala Leu Trp Arg Glu Phe Leu Phe Ser Val Pro Ala Gly Pro Pro Ala Gln Tyr Ser Val Thr Leu His Gly Gln Asp Val Leu Met Leu Pro Gly Asp Leu Val Gly Leu Gln His Asp Ala Gly Pro Gly Ala Leu Leu His Cys Ser Pro Ala Pro Gly His Pro Gly Pro Arg Ala Pro Tyr Leu Ser Ala Asn Ala Ser Ser Trp Leu Pro His Leu Pro Ala Gln Leu Glu Gly Thr Trp Gly Cys Pro Ala Cys Ala Leu Arg Leu Leu Ala Gln Arg Glu Gln Leu Thr Val Leu Leu Gly Leu Arg Pro Asn Pro Gly Leu Arg Leu Pro Gly Arg Tyr Glu Val Arg Ala 785 Glu Val Gly Asn Gly Val Ser Arg His Asn Leu Ser Cys Ser Phe Asp 810 Val Val Ser Pro Val Ala Gly Leu Arg Val Ile Tyr Pro Ala Pro Arg Asp Gly Arg Leu Tyr Val Pro Thr Asn Gly Ser Ala Leu Val Leu Gln





- Val Asp Ser Gly Ala Asn Ala Thr Ala Thr Ala Arg Trp Pro Gly Gly 850 855
- Ser Leu Ser Ala Arg Phe Glu Asn Val Cys Pro Ala Leu Val Ala Thr 865 870 875 880
- Phe Val Pro Ala Cys Pro Trp Glu Thr Asn Asp Thr Leu Phe Ser Val 885 890 895
- Val Ala Leu Pro Trp Leu Ser Glu Gly Glu His Val Val Asp Val Val 900 905 910
- Val Glu Asn Ser Ala Ser Arg Ala Asn Leu Ser Leu Arg Val Thr Ala 915 920 925
- Glu Glu Pro Ile Cys Gly Leu Arg Ala Thr Pro Ser Pro Glu Ala Arg 930 935 940
- Val Leu Gln Gly Val Leu Val Arg Tyr Ser Pro Val Val Glu Ala Gly 945 955 960
- Ser Asp Met Val Phe Arg Trp Thr Ile Asn Asp Lys Gln Ser Leu Thr 965 970 975
- Phe Gln Asn Val Val Phe Asn Val Ile Tyr Gln Ser Ala Ala Val Phe 980 985 990
- Lys Leu Ser Leu Thr Ala Ser Asn His Val Ser Asn Val Thr Val Asn 995 1000 1005
- Tyr Asn Val Thr Val Glu Arg Met Asn Arg Met Gln Gly Leu Gln Val 1010 1020
- Ser Thr Val Pro Ala Val Leu Ser Pro Asn Ala Thr Leu Ala Leu Thr 025 1030 1035 1040
- Ala Gly Val Leu Val Asp Ser Ala Val Glu Val Ala Phe Leu Trp Thr 1045 1050 1055
- Phe Gly Asp Gly Glu Gln Ala Leu His Gln Phe Gln Pro Pro Tyr Asn 1060 1065 1070
- Glu Ser Phe Pro Val Pro Asp Pro Ser Val Ala Gln Val Leu Val Glu 1075 1080 1085
- His Asn Val Thr His Thr Tyr Ala Ala Pro Gly Glu Tyr Leu Leu Thr 1090 1095 1100
- Val Leu Ala Ser Asn Ala Phe Glu Asn Leu Thr Gln Gln Val Pro Val 105 1110 1115 1120
- Ser Val Arg Ala Ser Leu Pro Ser Val Ala Val Gly Val Ser Asp Gly 1125 1130 1135
- Val Leu Val Ala Gly Arg Pro Val Thr Phe Tyr Pro His Pro Leu Pro 1140 1145 1150
- Ser Pro Gly Gly Val Leu Tyr Thr Trp Asp Phe Gly Asp Gly Ser Pro 1155 1160 1165
- Val Leu Thr Gln Ser Gln Pro Ala Ala Asn His Thr Tyr Ala Ser Arg 1170 1180
- Gly Thr Tyr His Val Arg Leu Glu Val Asn Asn Thr Val Ser Gly Ala 1190 1195 1200
- Ala Ala Gln Ala Asp Val Arg Val Phe Glu Glu Leu Arg Gly Leu Ser





1205 1210 121

Val Asp Met Ser Leu Ala Val Glu Gln Gly Ala Pro Val Val Ser 1220 1225 1230

Ala Ala Val Gln Thr Gly Asp Asn Ile Thr Trp Thr Phe Asp Met Gly 1235 1240 1245

Asp Gly Thr Val Leu Ser Gly Pro Glu Ala Thr Val Glu His Val Tyr 1250 1260

Leu Arg Ala Gln Asn Cys Thr Val Thr Val Gly Ala Gly Ser Pro Ala 265 1270 1275 1280

Gly His Leu Ala Arg Ser Leu His Val Leu Val Phe Val Leu Glu Val 1285 1290 1295

Leu Arg Val Glu Pro Ala Ala Cys Ile Pro Thr Gln Pro Asp Ala Arg 1300 1305 1310

Leu Thr Ala Tyr Val Thr Gly Asn Pro Ala His Tyr Leu Phe Asp Trp
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Thr Phe Gly Asp Gly Ser Ser Asn Thr Thr Val Arg Gly Cys Pro Thr 1330 1340

Val Thr His Asn Phe Thr Arg Ser Gly Thr Phe Pro Leu Ala Leu Val 345 1350 1355 1360

Leu Ser Ser Arg Val Asn Arg Ala His Tyr Phe Thr Ser Ile Cys Val 1365 1370 1375

Glu Pro Glu Val Gly Asn Val Thr Leu Gln Pro Glu Arg Gln Phe Val 1380 · 1385 1390

Gln Leu Gly Asp Glu Ala Trp Leu Val Ala Cys Ala Trp Pro Pro Phe 1395 1400 1405

Pro Tyr Arg Tyr Thr Trp Asp Phe Gly Thr Glu Glu Ala Ala Pro Thr 1410 1415 1420

Arg Ala Arg Gly Pro Glu Val Thr Phe Ile Tyr Arg Asp Pro Gly Ser 425 1430 1435 1440

Tyr Leu Val Thr Val Thr Ala Ser Asn Asn Ile Ser Ala Ala Asn Asp 1445 1450 1455

Ser Ala Leu Val Glu Val Gln Glu Pro Val Leu Val Thr Ser Ile Lys 1460 1465 1470

Val Asn Gly Ser Leu Gly Leu Glu Leu Gln Gln Pro Tyr Leu Phe Ser 1475 1480 1485

Ala Val Gly Arg Gly Arg Pro Ala Ser Tyr Leu Trp Asp Leu Gly Asp 1490 1495 1500

Gly Gly Trp Leu Glu Gly Pro Glu Val Thr His Ala Tyr Asn Ser Thr 505 1510 1515 1520

Gly Asp Phe Thr Val Arg Val Ala Gly Trp Asn Glu Val Ser Arg Ser 1525 1530 1535

Glu Ala Trp Leu Asn Val Thr Val Lys Arg Arg Val Arg Gly Leu Val 1540 1545 1550

Val Asn Ala Ser Arg Thr Val Val Pro Leu Asn Gly Ser Val Ser Phe 1555 1560 1565





Ser Thr Ser Leu Glu Ala Gly Ser Asp Val Arg Tyr Ser Trp Val Leu 1570 1580

Cys Asp Arg Cys Thr Pro Ile Pro Gly Gly Pro Thr Ile Ser Tyr Thr 585 1590 1595 1600

Phe Arg Ser Val Gly Thr Phe Asn Ile Ile Val Thr Ala Glu Asn Glu 1605 1610 1615

Val Gly Ser Ala Gln Asp Ser Ile Phe Val Tyr Val Leu Gln Leu Ile 1620 1625 1630

Glu Gly Leu Gln Val Val Gly Gly Gly Arg Tyr Phe Pro Thr Asn His 1635 1640 1645

Thr Val Gln Leu Gln Ala Val Val Arg Asp Gly Thr Asn Val Ser Tyr 1650 1660

Ser Trp Thr Ala Trp Arg Asp Arg Gly Pro Ala Leu Ala Gly Ser Gly 665 1670 1680

Lys Gly Phe Ser Leu Thr Val Leu Glu Ala Gly Thr Tyr His Val Gln 1685 1690 1695

Leu Arg Ala Thr Asn Met Leu Gly Ser Ala Trp Ala Asp Cys Thr Met 1700 1705 1710

Asp Phe Val Glu Pro Val Gly Trp Leu Met Val Ala Ala Ser Pro Asn 1715 1720 1725

Pro Ala Ala Val Asn Thr Ser Val Thr Leu Ser Ala Glu Leu Ala Gly 1730 1740

Gly Ser Gly Val Val Tyr Thr Trp Ser Leu Glu Glu Gly Leu Ser Trp 745 1750 1755 1760

Glu Thr Ser Glu Pro Phe Thr Thr His Ser Phe Pro Thr Pro Gly Leu 1765 1770 1775

His Leu Val Thr Met Thr Ala Gly Asn Pro Leu Gly Ser Ala Asn Ala 1780 1785 1790

Thr Val Glu Val Asp Val Gln Val Pro Val Ser Gly Leu Ser Ile Arg 1795 1800 1805

Ala Ser Glu Pro Gly Gly Ser Phe Val Ala Ala Gly Ser Ser Val Pro 1810 1815 1820

Phe Trp Gly Gln Leu Ala Thr Gly Thr Asn Val Ser Trp Cys Trp Ala 825 1830 1835 1840

Val Pro Gly Gly Ser Ser Lys Arg Gly Pro His Val Thr Met Val Phe 1845 1850 1855

Pro Asp Ala Gly Thr Phe Ser Ile Arg Leu Asn Ala Ser Asn Ala Val 1860 1865 1870

Ser Trp Val Ser Ala Thr Tyr Asn Leu Thr Ala Glu Glu Pro Ile Val 1875 1880 1885

Gly Leu Val Leu Trp Ala Ser Ser Lys Val Val Ala Pro Gly Gln Leu 1890 1895 1900

Val His Phe Gln Ile Leu Leu Ala Ala Gly Ser Ala Val Thr Phe Arg 1905 1910 1920





- Leu Gln Val Gly Gly Ala Asn Pro Glu Val Leu Pro Gly Pro Arg Phe 1925 1930 1935
- Ser His Ser Phe Pro Arg Val Gly Asp His Val Val Ser Val Arg Gly 1940 1945 1950
- Lys Asn His Val Ser Trp Ala Gln Ala Gln Val Arg Ile Val Val Leu 1955 1960 1965
- Glu Ala Val Ser Gly Leu Gln Val Pro Asn Cys Cys Glu Pro Gly Ile 1970 1975 1980
- Ala Thr Gly Thr Glu Arg Asn Phe Thr Ala Arg Val Gln Arg Gly Ser 985 1990 1995 2000
- Arg Val Ala Tyr Ala Trp Tyr Phe Ser Leu Gln Lys Val Gln Gly Asp $2005 \hspace{1cm} 2010 \hspace{1cm} 2015$
- Ser Leu Val Ile Leu Ser Gly Arg Asp Val Thr Tyr Thr Pro Val Ala 2020 2025 2030
- Ala Gly Leu Leu Glu Ile Gln Val Arg Ala Phe Asn Ala Leu Gly Ser 2035 2040 2045
- Glu Asn Arg Thr Leu Val Leu Glu Val Gln Asp Ala Val Gln Tyr Val 2050 2055 2060
- Ala Leu Gln Ser Gly Pro Cys Phe Thr Asn Arg Ser Ala Gln Phe Glu 065 2070 2075 2080
- Ala Ala Thr Ser Pro Ser Pro Arg Arg Val Ala Tyr His Trp Asp Phe 2085 2090 2095
- Gly Asp Gly Ser Pro Gly Gln Asp Thr Asp Glu Pro Arg Ala Glu His 2100 2105 2110
- Ser Tyr Leu Arg Pro Gly Asp Tyr Arg Val Gln Val Asn Ala Ser Asn 2115 2120 2125
- Leu Val Ser Phe Phe Val Ala Gln Ala Thr Val Thr Val Gln Val Leu 2130 2135 2140
- Ala Cys Arg Glu Pro Glu Val Asp Val Val Leu Pro Leu Gln Val Leu 145 2150 2155 2160
- Met Arg Arg Ser Gln Arg Asn Tyr Leu Glu Ala His Val Asp Leu Arg 2165 2170 2175
- Asp Cys Val Thr Tyr Gln Thr Glu Tyr Arg Trp Glu Val Tyr Arg Thr 2180 2185 2190
- Ala Ser Cys Gln Arg Pro Gly Arg Pro Ala Arg Val Ala Leu Pro Gly 2195 2200 2205
- Val Asp Val Ser Arg Pro Arg Leu Val Leu Pro Arg Leu Ala Leu Pro 2210 2215 2220
- Val Gly His Tyr Cys Phe Val Phe Val Val Ser Phe Gly Asp Thr Pro
 225 2230 2235 2240
- Leu Thr Gln Ser Ile Gln Ala Asn Val Thr Val Ala Pro Glu Arg Leu 2245 2250 2255
- Val Pro Ile Ile Glu Gly Gly Ser Tyr Arg Val Trp Ser Asp Thr Arg 2260 2265 2270
- Asp Leu Val Leu Asp Gly Ser Glu Ser Tyr Asp Pro Asn Leu Glu Asp

2275 2280 2285

Gly Asp Gln Thr Pro Leu Ser Phe His Trp Ala Cys Val Ala Ser Thr 2290 2300

Gln Arg Glu Ala Gly Gly Cys Ala Leu Asn Phe Gly Pro Arg Gly Ser 305 2310 2315 2320

Ser Thr Val Thr Ile Pro Arg Glu Arg Leu Ala Ala Gly Val Glu Tyr 2325 2330 2335

Thr Phe Ser Leu Thr Val Trp Lys Ala Gly Arg Lys Glu Glu Ala Thr 2340 2345 2350

Asn Gln Thr Val Leu Ile Arg Ser Gly Arg Val Pro Ile Val Ser Leu 2355 2360 2365

Glu Cys Val Ser Cys Lys Ala Gln Ala Val Tyr Glu Val Ser Arg Ser 2370 2380

Ser Tyr Val Tyr Leu Glu Gly Arg Cys Leu Asn Cys Ser Ser Gly Ser 385 2390 2395 2400

Lys Arg Gly Arg Trp Ala Ala Arg Thr Phe Ser Asn Lys Thr Leu Val 2405 2410 2415

Leu Asp Glu Thr Thr Ser Thr Gly Ser Ala Gly Met Arg Leu Val 2420 2425 2430

Leu Arg Arg Gly Val Leu Arg Asp Gly Glu Gly Tyr Thr Phe Thr Leu 2435 2440 2445

Thr Val Leu Gly Arg Ser Gly Glu Glu Glu Gly Cys Ala Ser Ile Arg 2450 2455 2460

Leu Ser Pro Asn Arg Pro Pro Leu Gly Gly Ser Cys Arg Leu Phe Pro 465 2470 2475 2480

Leu Gly Ala Val His Ala Leu Thr Thr Lys Val His Phe Glu Cys Thr 2485 2490 2495

Gly Trp His Asp Ala Glu Asp Ala Gly Ala Pro Leu Val Tyr Ala Leu 2500 2505 2510

Leu Leu Arg Arg Cys Arg Gln Gly His Cys Glu Glu Phe Cys Val Tyr 2515 2520 2525

Lys Gly Ser Leu Ser Ser Tyr Gly Ala Val Leu Pro Pro Gly Phe Arg 2530 2535 2540

Pro His Phe Glu Val Gly Leu Ala Val Val Gln Asp Gln Leu Gly 545 2550 2555 2560

Ala Ala Val Val Ala Leu Asn Arg Ser Leu Ala Ile Thr Leu Pro Glu 2565 2570 2575

Pro Asn Gly Ser Ala Thr Gly Leu Thr Val Trp Leu His Gly Leu Thr 2580 2585 2590

Ala Ser Val Leu Pro Gly Leu Leu Arg Gln Ala Asp Pro Gln His Val 2595 2600 2605

Ile Glu Tyr Ser Leu Ala Leu Val Thr Val Leu Asn Glu Tyr Glu Arg 2610 2615 2620

Ala Leu Asp Val Ala Ala Glu Pro Lys His Glu Arg Gln His Arg Ala 625 2630 2635 2640



Gln Ile Arg Lys Asn Ile Thr Glu Thr Leu Val Ser Leu Arg Val His 2645 2650 2655

Thr Val Asp Asp Ile Gln Gln Ile Ala Ala Ala Leu Ala Gln Cys Met 2660 2665 2670

Gly Pro Ser Arg Glu Leu Val Cys Arg Ser Cys Leu Lys Gln Thr Leu 2675 2680 2685

His Lys Leu Glu Ala Met Met Leu Ile Leu Gln Ala Glu Thr Thr Ala 2690 2695 2700

Gly Thr Val Thr Pro Thr Ala Ile Gly Asp Ser Ile Leu Asn Ile Thr 705 2710 2715 2720

Gly Asp Leu Ile His Leu Ala Ser Ser Asp Val Arg Ala Pro Gln Pro 2725 2730 2735

Ser Glu Leu Gly Ala Glu Ser Pro Ser Arg Met Val Ala Ser Gln Ala 2740 2745 2750

Tyr Asn Leu Thr Ser Ala Leu Met Arg Ile Leu Met Arg Ser Arg Val 2755 2760 2765

Leu Asn Glu Glu Pro Leu Thr Leu Ala Gly Glu Glu Ile Val Ala Gln 2770 2775 2780

Gly Lys Arg Ser Asp Pro Arg Ser Leu Leu Cys Tyr Gly Gly Ala Pro 785 2790 2795 2800

Gly Pro Gly Cys His Phe Ser Ile Pro Glu Ala Phe Ser Gly Ala Leu 2805 2810 2815

Ala Asn Leu Ser Asp Val Val Gln Leu Ile Phe Leu Val Asp Ser Asn 2820 2825 2830

Pro Phe Pro Phe Gly Tyr Ile Ser Asn Tyr Thr Val Ser Thr Lys Val 2835 2840 2845

Ala Ser Met Ala Phe Gln Thr Gln Ala Gly Ala Gln Ile Pro Ile Glu 2850 2855 2860

Arg Leu Ala Ser Glu Arg Ala Ile Thr Val Lys Val Pro Asn Asn Ser 865 2870 2875 2880

Asp Trp Ala Ala Arg Gly His Arg Ser Ser Ala Asn Ser Ala Asn Ser 2885 2890 2895

Val Val Gln Pro Gln Ala Ser Val Gly Ala Val Val Thr Leu Asp 2900 2905 2910

Ser Ser Asn Pro Ala Ala Gly Leu His Leu Gln Leu Asn Tyr Thr Leu 2915 2920 2925

Leu Asp Gly His Tyr Leu Ser Glu Glu Pro Glu Pro Tyr Leu Ala Val 2930 2935 2940

Tyr Leu His Ser Glu Pro Arg Pro Asn Glu His Asn Cys Ser Ala Ser 945 2950 2955 2960

Arg Arg Ile Arg Pro Glu Ser Leu Gln Gly Ala Asp His Arg Pro Tyr 2965 2970 2975

Thr Phe Phe Ile Ser Pro Gly Ser Arg Asp Pro Ala Gly Ser Tyr His 2980 2985 2990





Leu Asn Leu Ser Ser His Phe Arg Trp Ser Ala Leu Gln Val Ser Val 2995 3000 3005

Gly Leu Tyr Thr Ser Leu Cys Gln Tyr Phe Ser Glu Glu Asp Met Val 3010 3015 3020

Trp Arg Thr Glu Gly Leu Leu Pro Leu Glu Glu Thr Ser Pro Arg Gln 025 3030 3035 3040

Ala Val Cys Leu Thr Arg His Leu Thr Ala Phe Gly Ala Ser Leu Phe 3045 3050 3055

Val Pro Pro Ser His Val Arg Phe Val Phe Pro Glu Pro Thr Ala Asp 3060 3065 3070

Val Asn Tyr Ile Val Met Leu Thr Cys Ala Val Cys Leu Val Thr Tyr 3075 3080 3085

Met Val Met Ala Ala Ile Leu His Lys Leu Asp Gln Leu Asp Ala Ser 3090 3095 3100

Arg Gly Arg Ala Ile Pro Phe Cys Gly Gln Arg Gly Arg Phe Lys Tyr 3110 3115 3120

Glu Ile Leu Val Lys Thr Gly Trp Gly Arg Gly Ser Gly Thr Thr Ala 3125 3130 3135

His Val Gly Ile Met Leu Tyr Gly Val Asp Ser Arg Ser Gly His Arg 3140 3145 3150

His Leu Asp Gly Asp Arg Ala Phe His Arg Asn Ser Leu Asp Ile Phe 3155 3160 3165

Arg Ile Ala Thr Pro His Ser Leu Gly Ser Val Trp Lys Ile Arg Val 3170 3175 3180

Trp His Asp Asn Lys Gly Leu Ser Pro Ala Trp Phe Leu Gln His Val 185 3190 3195 3200

Ile Val Arg Asp Leu Gln Thr Ala Arg Ser Ala Phe Phe Leu Val Asn 3205 3210 3215

Asp Trp Leu Ser Val Glu Thr Glu Ala Asn Gly Gly Leu Val Glu Lys 3220 3225 3230

Glu Val Leu Ala Ala Ser Asp Ala Ala Leu Leu Arg Phe Arg Arg Leu 3235 3240 3245

Leu Val Ala Glu Leu Gln Arg Gly Phe Phe Asp Lys His Ile Trp Leu 3250 3255 3260

Ser Ile Trp Asp Arg Pro Pro Arg Ser Arg Phe Thr Arg Ile Gln Arg 265 3270 3275 3280

Ala Thr Cys Cys Val Leu Leu Ile Cys Leu Phe Leu Gly Ala Asn Ala 3285 3290 3295

Val Trp Tyr Gly Ala Val Gly Asp Ser Ala Tyr Ser Thr Gly His Val 3300 3305 3310

Ser Arg Leu Ser Pro Leu Ser Val Asp Thr Val Ala Val Gly Leu Val 3315 3320 3325

Ser Ser Val Val Val Tyr Pro Val Tyr Leu Ala Ile Leu Phe Leu Phe 3330 3340

Arg Met Ser Arg Ser Lys Val Ala Gly Ser Pro Ser Pro Thr Pro Ala





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Gly Gln Gln Val Leu Asp Ile Asp Ser Cys Leu Asp Ser Ser Val Leu 3365 3370 3375

Asp Ser Ser Phe Leu Thr Phe Ser Gly Leu His Ala Glu Gln Ala Phe 3380 3385 3390

Val Gly Gln Met Lys Ser Asp Leu Phe Leu Asp Asp Ser Lys Ser Leu 3395 3400 3405

Val Cys Trp Pro Ser Gly Glu Gly Thr Leu Ser Trp Pro Asp Leu Leu 3410 3415 3420

Ser Asp Pro Ser Ile Val Gly Ser Asn Leu Arg Gln Leu Ala Arg Gly 425 3430 3435 3440

Gln Ala Gly His Gly Leu Gly Pro Glu Glu Asp Gly Phe Ser Leu Ala 3445 3450 3455

Ser Pro Tyr Ser Pro Ala Lys Ser Phe Ser Ala Ser Asp Glu Asp Leu 3460 3465 3470

Ile Gln Gln Val Leu Ala Glu Gly Val Ser Ser Pro Ala Pro Thr Gln 3475 3480 3485

Asp Thr His Met Glu Thr Asp Leu Leu Ser Ser Leu Ser Ser Thr Pro 3490 3495 3500

Gly Glu Lys Thr Glu Thr Leu Ala Leu Gln Arg Leu Gly Glu Leu Gly 505 3510 3515 3520

Pro Pro Ser Pro Gly Leu Asn Trp Glu Gln Pro Gln Ala Ala Arg Leu 3525 3530 3535

Ser Arg Thr Gly Leu Val Glu Gly Leu Arg Lys Arg Leu Leu Pro Ala 3540 3545 3550

Trp Cys Ala Ser Leu Ala His Gly Leu Ser Leu Leu Leu Val Ala Val 3555 3560 3565

Ala Val Ala Val Ser Gly Trp Val Gly Ala Ser Phe Pro Pro Gly Val 3570 3575 3580

Ser Val Ala Trp Leu Leu Ser Ser Ser Ala Ser Phe Leu Ala Ser Phe 3590 3595 3600

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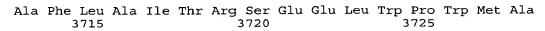
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Lys Arg Leu His Gly Met Leu Arg Ser Leu Leu Val Tyr Met Leu Phe 665 3670 3675 3680

Leu Leu Val Thr Leu Leu Ala Ser Tyr Gly Asp Ala Ser Cys His Gly 3695 3690 3695

His Ala Tyr Arg Leu Gln Ser Ala Ile Lys Gln Glu Leu His Ser Arg 3700 3705 3710



His Val Leu Leu Pro Tyr Val His Gly Asn Gln Ser Ser Pro Glu Leu 3730 3740

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Gly Ser Cys Ala Val Tyr Asp Ser Gly Gly Tyr Val Gln Glu Leu Gly 3810 3815 3820

Leu Ser Leu Glu Glu Ser Arg Asp Arg Leu Arg Phe Leu Gln Leu His 3835 3840

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Tyr Ser Pro Ala Val Gly Leu His Ala Ala Val Thr Leu Arg Leu Glu 3860 3865 3870

Phe Pro Ala Ala Gly Arg Ala Leu Ala Ala Leu Ser Val Arg Pro Phe 3875 3880 3885

Ala Leu Arg Arg Leu Ser Ala Gly Leu Ser Leu Pro Leu Leu Thr Ser 3890 3895 3900

Val Cys Leu Leu Phe Ala Val His Phe Ala Val Ala Glu Ala Arg 905 3910 3915 3920

Thr Trp His Arg Glu Gly Arg Trp Arg Val Leu Arg Leu Gly Ala Trp 3925 3930 3935

Ala Arg Trp Leu Leu Val Ala Leu Thr Ala Ala Thr Ala Leu Val Arg 3940 3945 3950

Leu Ala Gln Leu Gly Ala Ala Asp Arg Gln Trp Thr Arg Phe Val Arg 3955 3960 3965

Gly Arg Pro Arg Arg Phe Thr Ser Phe Asp Gln Val Ala His Val Ser 3970 3975 3980

Ser Ala Ala Arg Gly Leu Ala Ala Ser Leu Leu Phe Leu Leu Val 3990 3995 4000

Lys Ala Ala Gln His Val Arg Phe Val Arg Gln Trp Ser Val Phe Gly 4005 4010 4015

Lys Thr Leu Cys Arg Ala Leu Pro Glu Leu Leu Gly Val Thr Leu Gly 4020 4025 4030

Leu Val Val Leu Gly Val Ala Tyr Ala Gl
n Leu Ala Ile Leu Val 4035 4040 4045

Ser Ser Cys Val Asp Ser Leu Trp Ser Val Ala Gln Ala Leu Leu Val 4050 4060



Leu Cys Pro Gly Thr Gly Leu Ser Thr Leu Cys Pro Ala Glu Ser Trp 4070 4075 4080

His Leu Ser Pro Leu Leu Cys Val Gly Leu Trp Ala Leu Arg Leu Trp 4085 4090 4095

Gly Ala Leu Arg Leu Gly Ala Val Ile Leu Arg Trp Arg Tyr His Ala 4100 4105 4110

Leu Arg Gly Glu Leu Tyr Arg Pro Ala Trp Glu Pro Gln Asp Tyr Glu 4115 4120 4125

Met Val Glu Leu Phe Leu Arg Arg Leu Arg Leu Trp Met Gly Leu Ser 4130 4135 4140

Lys Val Lys Glu Phe Arg His Lys Val Arg Phe Glu Gly Met Glu Pro 4150 4155 4160

Leu Pro Ser Arg Ser Ser Arg Gly Ser Lys Val Ser Pro Asp Val Pro 4165 4170 4175

Pro Pro Ser Ala Gly Ser Asp Ala Ser His Pro Ser Thr Ser Ser Ser 4180 4185 4190

Gln Leu Asp Gly Leu Ser Val Ser Leu Gly Arg Leu Gly Thr Arg Cys 4195 4200 4205

Glu Pro Glu Pro Ser Arg Leu Gln Ala Val Phe Glu Ala Leu Leu Thr 4210 4215 4220

Gln Phe Asp Arg Leu Asn Gln Ala Thr Glu Asp Val Tyr Gln Leu Glu 225 4230 4235 4240

Gln Gln Leu His Ser Leu Gln Gly Arg Arg Ser Ser Arg Ala Pro Ala 4245 4250 4255

Gly Ser Ser Arg Gly Pro Ser Pro Gly Leu Arg Pro Ala Leu Pro Ser 4260 4265 4270

Arg Leu Ala Arg Ala Ser Arg Gly Val Asp Leu Ala Thr Gly Pro Ser 4275 4280 4285

Arg Thr Pro Leu Arg Ala Lys Asn Lys Val His Pro Ser Ser Thr 4290 4295 4300

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<211> 12685

<212> DNA

<213> C. Elegans lov-1 gene

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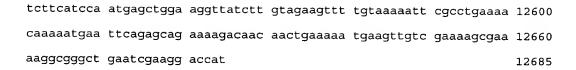




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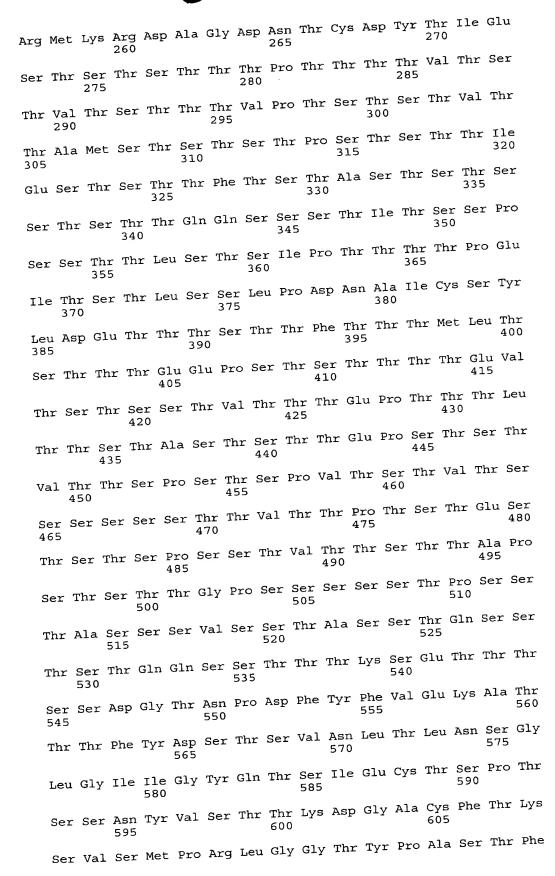
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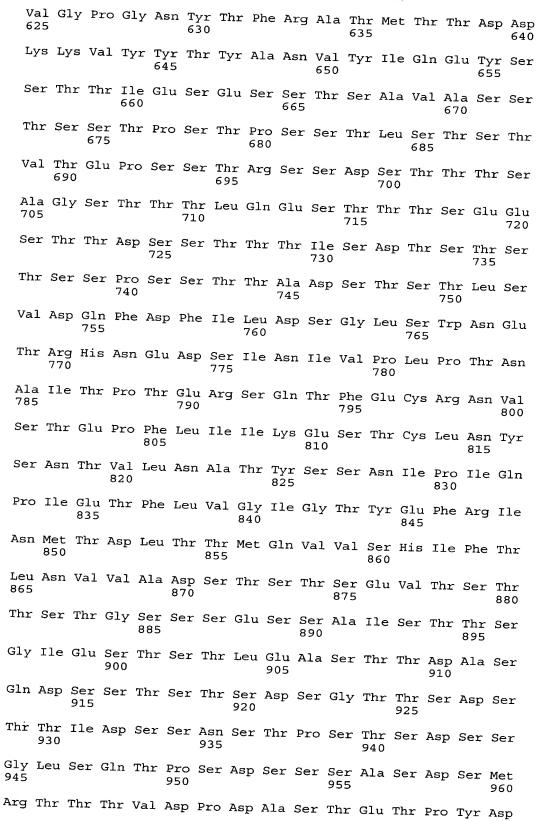


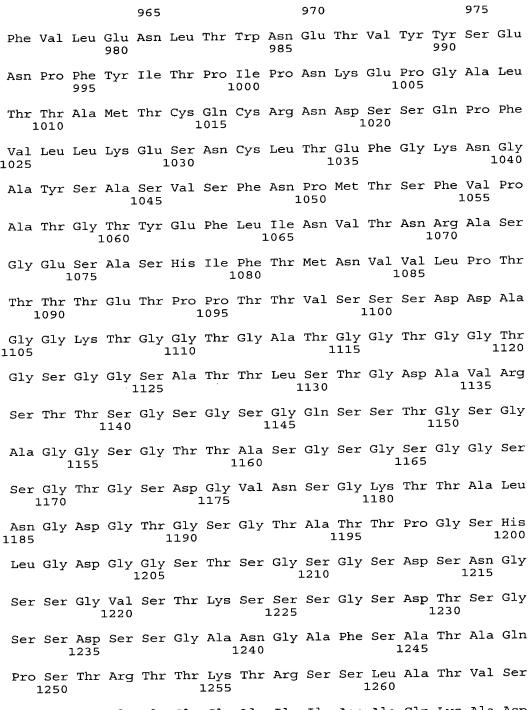
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Val Met Asn Gln Leu Ala Gly Ile Met Asp Gly Ser Ala Ser Asn Asn 1285 1290 1295

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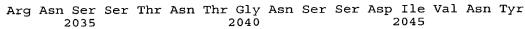
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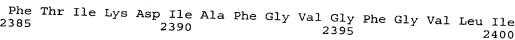
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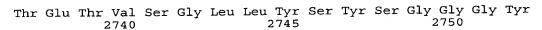
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Ile Glu Phe Ser Ala Tyr Asn Ala Gln Ile Asn Tyr Phe Ser Val Val 2785 2790 2795 2800

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Thr Thr Met Lys Pro Thr Arg Asn Pro Phe Lys Ile Val Tyr Gln Leu 2865 2870 2875 2880

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Thr Asn Arg Ala Met Glu Asp Phe Asn Ala Asn Asn Gly Asn Ser Tyr 2915 2920 2925

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Leu Ala Gly Ala Val Phe Phe Thr Ser Cys Lys Met Ile Arg Ile Leu 2945 2950 2960

Arg Phe Asn Arg Arg Ile Gly Val Leu Ala Ala Thr Leu Asp Asn Ala 2965 2970 2975

Leu Gly Ala Ile Val Ser Phe Gly Ile Ala Phe Leu Phe Phe Ser Met 2980 2985 2990

Thr Phe Asn Ser Val Leu Tyr Ala Val Leu Gly Asn Lys Met Gly Gly 2995 3000 3005

Tyr Arg Ser Leu Met Ala Thr Phe Gln Thr Ala Leu Ala Gly Met Leu 3010 3015 3020

Gly Lys Leu Asp Val Thr Ser Ile Gln Pro Ile Ser Gln Phe Ala Phe 3025 3030 3035 3040

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Ser Glu Lys Gln Thr Asn Asp Tyr Glu Ile Ile Asp His Ile Lys Tyr 3075 3080 3085

Lys Thr Lys Arg Arg Leu Gly Leu Leu Glu Pro Lys Asp Phe Ala Pro

3090 3095 3100

Val Ser Ile Ala Asp Thr Gln Lys Asp Phe Arg Leu Phe His Ser Ala 3105 3110 3115

Val Ala Lys Val Asn Leu Leu His His Arg Ala Thr Arg Met Leu Gln 3125 3130 3135

Thr Gln Gly Gln Tyr Gln Asn Gln Thr Val Ile Asn Tyr Thr Leu Ser 3140 3150

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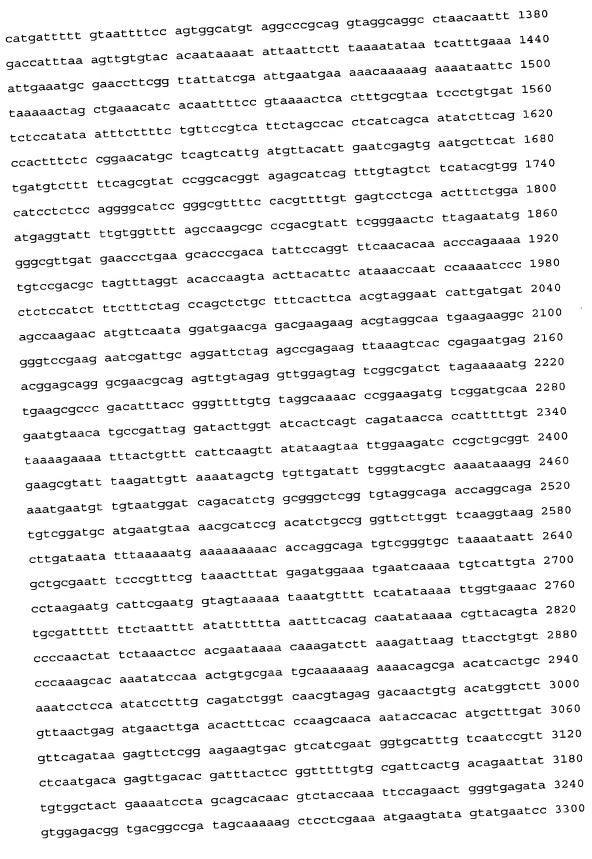
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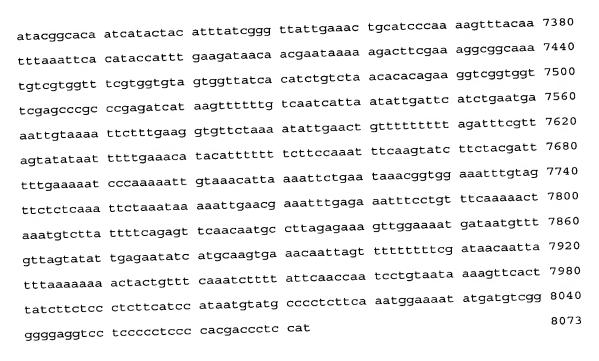
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Ile Asp Lys Lys Leu Met Ile Ser Gly Gly Leu Glu Pro Pro Thr Phe 50 60

Cys Val Leu Asp Arg Cys Asp Asn His Tyr Thr Thr Lys Pro Arg His 65 70 75 80

Leu Pro Pro Phe Glu Val Phe Leu Phe Val Val Ile Phe Lys Cys Glu 85 90 95

Pro Ser Ser Met Asn Tyr Gly Ala Ala Asp Glu Arg Trp Ala Asn Pro 100 105 110

Pro Gln Pro Val Ala Ala Ala Glu His Gly Pro Ser Phe Asp His Ser 115 120 125

Met Val Ser Glu Glu Tyr Glu His Asp Lys Lys Lys Asn Pro Ala Gln 130 140

Lys Glu Gly Ile Ser Phe Ser Gln Ala Leu Leu Ala Ser Gly His Glu 145 150 155 160

Lys Ser Asp Gly Lys Ile Lys Leu Thr Ala Arg Ser Phe Met Glu Val 165 170 175



Gly Gly Tyr Ala Val Phe Leu Ile Val Leu Val Tyr Val Ala Phe Ala Gln Asn Ser Ile Gln Ser Tyr Tyr Tyr Ser Lys Val Met Ser Asp Leu Phe Val Ala Ser Thr Gly Ala Ser Gly Ala Pro Ala Phe Gly Ser Cys Thr Ser Met Asp Asn Ile Trp Asp Trp Leu Ser Gln Val Leu Ile Pro Gly Ile Tyr Trp Thr Glu Thr Ser Asn Ser Thr Asp Asn Glu Asn Met 245 Ile Tyr Tyr Glu Asn Arg Leu Leu Gly Glu Pro Arg Ile Arg Met Leu Lys Val Thr Asn Asp Ser Cys Thr Val Met Lys Ser Phe Gln Arg Glu Ile Lys Glu Cys Phe Ala Asn Tyr Glu Glu Lys Leu Glu Asp Lys Thr 295 Met Val Gly Asp Gly Ser Val Asp Ala Phe Ile Tyr Ala Thr Ala Lys 305 Glu Leu Glu Asn Leu Lys Thr Val Gly Thr Ile Ala Ser Tyr Gly Gly 330 Gly Gly Phe Val Gln Arg Leu Pro Val Ala Gly Ser Thr Glu Ala Gln Ser Ala Ile Ala Thr Leu Lys Ala Asn Arg Trp Ile Asp Arg Gly Ser Arg Ala Ile Ile Val Asp Phe Ala Leu Tyr Asn Ala Asn Ile Asn Leu Phe Cys Val Val Lys Leu Leu Phe Glu Leu Pro Ala Ser Gly Gly Val 390 Ile Thr Thr Pro Lys Leu Met Thr Tyr Asp Leu Leu Thr Tyr Gln Thr Ser Gly Gly Thr Arg Met Met Ile Phe Glu Gly Ile Phe Cys Gly Phe Ile Leu Tyr Phe Ile Phe Glu Glu Leu Phe Ala Ile Gly Arg His Arg 440 Leu His Tyr Leu Thr Gln Phe Trp Asn Leu Val Asp Val Val Leu Leu Gly Phe Ser Val Ala Thr Ile Ile Leu Ser Val Asn Arg Thr Lys Thr 470 Gly Val Asn Arg Val Asn Ser Val Ile Glu Asn Gly Leu Thr Asn Ala 485 Pro Phe Asp Asp Val Thr Ser Ser Glu Asn Ser Tyr Leu Asn Ile Lys 505 Ala Cys Val Val Phe Val Ala Trp Val Lys Val Phe Lys Phe Ile Ser Val Asn Lys Thr Met Ser Gln Leu Ser Ser Thr Leu Thr Arg Ser Ala

540 535

	F20					535						540						
Lys	530 Asp	Ile	Gly	Gly	Phe 550	Ala	Val	Me	t I	?he	Ala 555	Val	Ph	e P	he	Phe	A1.	a 0
545 Phe	Ala	Gln	Phe	Gly		Leu	Cys	Ph	e (Gly 570	Thr	Gln	Il	e A	la	Asp 575	Ту	r
			Tyr	Asn														
		Asn	580 Phe	. Ser														
Ala	Phe	595 Phe	· e Ile	a Ala	туг	Val	Phe	e Pl	he	Val	Ser	Phe 620	≘ I: O	le 1	Leu	Leu	ı As	sn
C 2 E		e Lei		a Ile	000	•												
625 Lev	. Ala	a Ar	g Ly:	s Lys 645	s Ası	, Gly	y Gl	u G	ly	11e	e Lei	ı As	рТ	rp	Phe	Met 65!	: A	sn
Lys	₃ Vai	l Ar	g Gl 66	y Lei		r Ly:	s Ar	g G	;1y ;65	Lys	a Ar	g Pr	o A	sp	Ala 670	Pr	o G	ly
Gl	ı As	p Al 67	a Th	r Ty	r Gl	u As	р Т <u>у</u> 88	/r I	'ys	Le	u Me	t Le	u T	Tyr 585	Arg	g Al	a G	ly
ту	r Al 69	a Gl	u Ly	s As	p Il	e As 69	n G	lu A	Ala	Ph	e Th	r Ai 70	cg I	?he	Ası	n Va	1 7	Thr
	r Me	t Tl	nr Gl	Lu Hi	.s Vá	l Pr	o G	lu I	Lys	. Va	1 Al	.a G:	lu i	Asp	Il	e Al	a I	Asp 720
	u Va			rg Me	23													
Aı	g As	T q	yr A	la As 40	sn L	eu As	sn A	.rg	Ar 74	g Vá 5	al A	sp G	ln	Met	Gl 75	n G:	lu	Ser
Va	al P	he S	er I 55	le V	al A	sp A	rg I	le 760	Gl	u G	ly V	al A	sn	Ala 765	Th	ır L	eu	Gln
	7	le G	lu I	ys G			. –											
A	sp L 85	eu S	Ser P	Ala I	eu I	eu T '90	hr i	Asn	G1	.n V	al A	rg 2	Asn	Arg	g G	lu S	er	Ala 800
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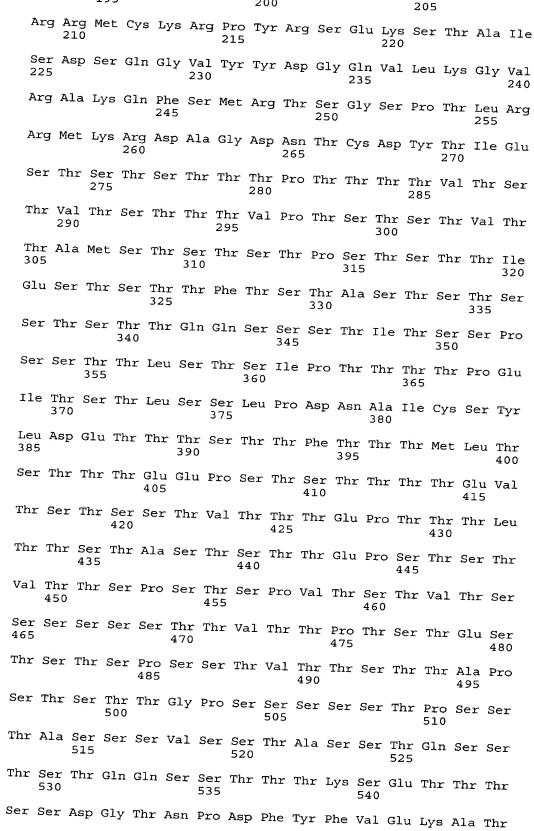
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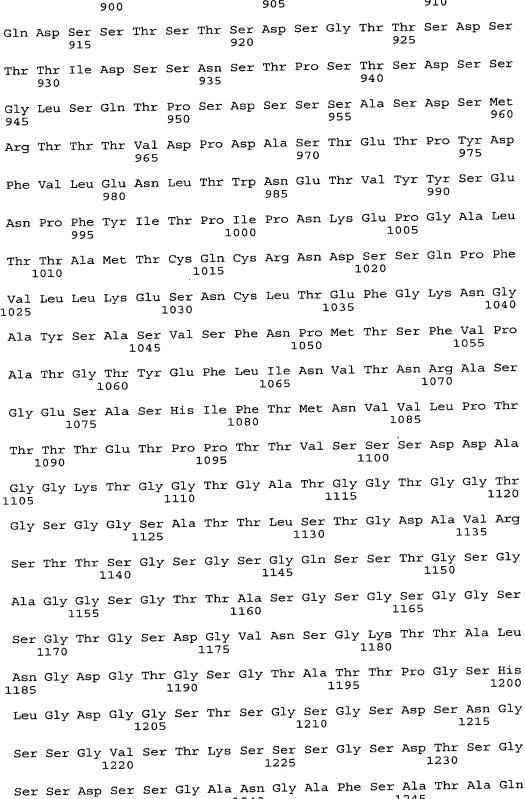
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Leu Asp Asn Asp Asp Thr Thr Ile Gly Gly Val Pro Arg Asn Ser Gln 85 90 95								
Gly Val Val Lys Ile Lys Leu Ser Cys Gly Leu Asn Arg Leu Ser Val								
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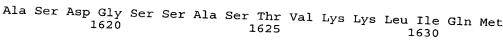


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- Lys Ile Pro Gly Val Gly Asn Met Ser Ser Val Asp Val Leu Lys Thr 1330 1335
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Thr Val Ser Ile Ser Thr Leu Ser Pro Thr Ala Ser Tyr Thr Lys Asp 1685 1690 1695

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Thr Thr Ser Asn Ser Leu Leu Ser Ile Ala Gly Ser Leu Thr Ser Ala 1715 1720 1725

Leu Lys Ile Ala Leu Asp Asn Pro Leu Ser Ser Asp Leu Ala Ala Asn 1730 1735 1740

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Trp Ala Ala Tyr Val Thr Lys Met Phe Gln Lys Asn Ile Ala Lys Asn 1780 1785 1790

Leu Ala Asn Gln Leu Ala Ser Thr Leu Asp Thr Leu Glu Asn Thr Leu 1795 1800 1805

Ala Ala Arg Ala Ile Ala Thr Gly Asn Leu Pro Tyr Asp Tyr Ser Asn 1810 1820

Ser Val Asp Gly Thr Gly Met Val Ile Val Ile Asp Asp Ala Ser Asn 1825 1830 1835 1840

Ile Val Gly Lys Thr Gln Asn Cys Glu Glu Trp Ala Phe Lys Leu Pro 1845 1850 1855

Ser Pro Ala Ser Thr Leu Asn Thr Ala Glu Ile Thr Asp Lys Thr Leu 1860 1865 1870

Ile Gln Val Gly Leu Val Cys Tyr Ala Thr Asn Pro Arg Thr Tyr Val 1875 1880 1885

Asp Asn Phe Asp Met Leu Ile Thr Ser Gly Ala Leu Glu Ala His Ile 1890 1895 1900

Lys Asp Glu Asn Gln Ile Ile Ile Pro Ile Thr Gly Thr Thr Ala Pro 1905 1910 1915 1920

Ile Tyr Val Asn Gly Arg Gly Ser Glu Asp Asp Ala Val Leu Thr Leu 1925 1930 1935

Met Gln Gln Gly Asp Phe Ala Ser Tyr Gln Ile Leu Asp Leu His Ala 1940 1945 1950

Phe Arg Thr Thr Asn Trp Asn Asn Ser Leu Gln Val Glu Ile Ile Ala 1955 1960 1965

Ser Gln Asp Tyr Glu Ile Pro Asn Asn Asp Asp Thr Tyr Met Phe Ser

1970 1975 1980

Ser Phe Gln Ser Leu Pro Gly Pro Leu Glu Ser Asn His Glu Trp Ile 1985 1990 1995 2000

- Phe Asp Leu Asn Thr Leu Asn Lys Thr Ser Asn Tyr Phe Val Thr Ala 2015
- Gly Asn Leu Ile Asn Asn Thr Gly Leu Phe Phe Ile Gly Ile Gly Lys 2020 2025
- Arg Asn Ser Ser Thr Asn Thr Gly Asn Ser Ser Asp Ile Val Asn Tyr 2035
- Gly Gln Tyr Asp Ser Met Gln Trp Ser Phe Ala Arg Ser Val Pro Met 2050 2055
- Asp Tyr Gln Val Ala Ala Val Ser Lys Gly Cys Tyr Phe Tyr Gln Lys 2065 2070 2080
- Thr Ser Asp Val Phe Asn Ser Glu Gly Met Tyr Pro Ser Asp Gly Gln 2095
- Gly Met Gln Phe Val Asn Cys Ser Thr Asp His Leu Thr Met Phe Ser 2100 2105
- Val Gly Ala Phe Asn Pro Thr Ile Asp Ala Asp Phe Ser Tyr Asn Tyr 2115 2120 2125
- Asn Val Asn Glu Ile Glu Lys Asn Val Lys Val Met Ile Ala Ala Val 2130 2135 2140
- Phe Met Leu Val Val Tyr Gly Cys Leu Thr Ile Asn Ala Ile Ile Cys 2160 2145
- Gln Arg Lys Asp Ala Ser Arg Gly Arg Leu Arg Phe Leu Lys Asp Asn 2175
- Glu Pro His Asp Gly Tyr Met Tyr Val Ile Ala Val Glu Thr Gly Tyr 2185 2190
- Arg Met Phe Ala Thr Thr Asp Ser Thr Ile Cys Phe Asn Leu Ser Gly 2195 2200
- Asn Glu Gly Asp Gln Ile Phe Arg Ser Phe Arg Ser Glu Glu Asp Gly 2210 2215
- Asn Trp Glu Phe Pro Phe Ser Trp Gly Thr Thr Asp Arg Phe Val Met 2225 2230 2240
- Thr Thr Ala Phe Pro Leu Gly Glu Leu Glu Tyr Met Arg Leu Trp Leu 2255
- Asp Asp Ala Gly Leu Asp His Arg Glu Ser Trp Tyr Cys Asn Arg Ile 2260 2265 2270
- Ile Val Lys Asp Leu Gln Thr Gln Asp Ile Tyr Tyr Phe Pro Phe Asn 2275
- Asn Trp Leu Gly Thr Lys Asn Gly Asp Gly Glu Thr Glu Arg Leu Ala 2290 2295 2300
- Arg Val Glu Tyr Lys Arg Arg Phe Leu Asp Glu Ser Met Ser Met His 2315 2320
- Met Leu Ala Gln Thr Ile Ser Trp Phe Ala Met Phe Thr Gly Gly

2325 2330 2335





Asn Arg Leu Arg Asp Arg Val Ser Arg Gln Asp Tyr Ser Val Ser Ile 2340 2345 2350

Ile Phe Ser Leu Val Val Ser Met Ile Ser Ile Thr Ile Leu Lys 2355 2360 2365

Ser Asp Asn Ser Ile Ile Ser Asp Ser Lys Ser Val Ser Glu Phe Thr 2370 2375 2380

Phe Thr Ile Lys Asp Ile Ala Phe Gly Val Gly Phe Gly Val Leu Ile 2385 2390 2395 2400

Thr Phe Leu Asn Ser Leu His Ile Leu Leu Cys Thr Lys Cys Arg Ser 2405 2410 2415

His Ser Glu His Tyr Tyr Tyr Lys Lys Arg Lys Arg Glu Asp Pro Glu 2420 2425 2430

Phe Lys Asp Asn Ser Gly Ser Trp Pro Met Phe Met Ala Gly Met Ala 2435 2440 2445

Arg Thr Ile Ile Val Phe Pro Val Leu Met Gly Leu Ile Tyr Ile Ser 2450 2455 2460

Gly Ala Gly Met Ser Leu Met Asp Asp Leu Ala Asn Ser Phe Tyr Ile 2465 2470 2475 2480

Arg Phe Leu Ile Ser Leu Ile Leu Trp Ala Val Val Phe Glu Pro Ile 2485 2490 2495

Lys Gly Leu Ile Trp Ala Phe Leu Ile Leu Lys Thr Arg Lys Ser His 2500 2505 2510

Lys Ile Ile Asn Lys Leu Glu Gly Ser Asp Gly Thr Val Val Lys Tyr 2515 2520 2525

Tyr Glu Met Leu Tyr Ile Phe Phe Ser Val Leu Ile Phe Val Lys Glu 2530 2535 2540

Ile Val Phe Tyr Leu Tyr Gly Arg Tyr Lys Val Ile Thr Thr Met Lys 2545 2550 2560

Pro Thr Arg Asn Pro Phe Lys Ile Val Tyr Gln Leu Ala Leu Gly Asn 2565 2570 2575

Phe Ser Pro Trp Asn Phe Met Asp Leu Ile Val Gly Ala Leu Ala Val 2580 2585 2590

Ala Ser Val Leu Ala Tyr Thr Ile Arg Gln Arg Thr Thr Asn Arg Ala 2595 2600 2605

Met Glu Asp Phe Asn Ala Asn Asn Gly Asn Ser Tyr Ile Asn Leu Thr 2610 2615 2620

Glu Gln Arg Asn Trp Glu Ile Val Phe Ser Tyr Cys Leu Ala Gly Ala 2625 2630 2635 2640

Val Phe Phe Thr Ser Cys Lys Met Ile Arg Ile Leu Arg Phe Asn Arg 2645 2650 2655

Arg Ile Gly Val Leu Ala Ala Thr Leu Asp Asn Ala Leu Gly Ala Ile 2660 2665 2670

Val Ser Phe Gly Ile Ala Phe Leu Phe Phe Ser Met Thr Phe Asn Ser

Val Leu Tyr Ala Val Leu Gly Asn Lys Met Gly Gly Tyr Arg Ser Leu 2690 2695 2700

Met Ala Thr Phe Gln Thr Ala Leu Ala Gly Met Leu Gly Lys Leu Asp 2705 2710 2715 2720

Val Thr Ser Ile Gln Pro Ile Ser Gln Phe Ala Phe Val Val Ile Met 2725 2730 2735

Leu Tyr Met Ile Ala Gly Ser Lys Leu Val Leu Gln Leu Tyr Val Thr 2740 2745 2750

Ile Ile Met Phe Glu Phe Glu Glu Ile Arg Asn Asp Ser Glu Lys Gln 2755 2760 2765

Thr Asn Asp Tyr Glu Ile Ile Asp His Ile Lys Tyr Lys Thr Lys Arg 2770 2775 2780

Arg Leu Gly Leu Leu Glu Pro Lys Asp Phe Ala Pro Val Ser Ile Ala 2785 2790 2795 2800

Asp Thr Gln Lys Asp Phe Arg Leu Phe His Ser Ala Val Ala Lys Val 2805 2810 2815

Asn Leu Leu His His Arg Ala Thr Arg Met Leu Gln Thr Gln Gly Gln 2820 2830

Tyr Gln Asn Gln Thr Val Ile Asn Tyr Thr Leu Ser Tyr Asp Pro Val 2835 2840 2845

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Asn Asp Val Glu Lys Asp 2865 2870

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<212> PRT

<213> C. Elegans Pkd-2 deletion mutant (sy606) protein

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Pro Phe Glu Glu Gly His Thr Leu Trp Met Lys Arg Glu Lys Ile Lys 20 25 30

His Leu Gln Arg Ile Leu Gln Phe His Ser Asp Glu Ser Ile Leu Met 35 40 45

Ile Asp Lys Leu Met Ile Ser Gly Gly Leu Glu Pro Pro Thr Phe 50 60

Cys Val Leu Asp Arg Cys Asp Asn His Tyr Thr Thr Lys Pro Arg His 65 70 75 80

Leu Pro Pro Phe Glu Val Phe Leu Phe Val Val Ile Phe Lys Cys Glu
85 90 95

Pro Ser Ser Met Asn Tyr Gly Ala Ala Asp Glu Arg Trp Ala Asn Pro 100 105 110





Pro Gln Pro Val Ala Ala Ala Glu His Gly Pro Ser Phe Asp His Ser 115 120 125

Met Val Ser Glu Glu Tyr Glu His Asp Lys Lys Lys Asn Pro Ala Gln 130 135 140

Lys Glu Gly Ile Ser Phe Ser Gln Ala Leu Leu Ala Ser Gly His Glu 145 150 155 160

Lys Ser Asp Gly Lys Ile Lys Leu Thr Ala Arg Ser Phe Met Glu Val

Gly Gly Tyr Ala Val Phe Leu Ile Val Leu Val Tyr Asp Ser Ser Thr $180 \,$

Pro Arg Gln Lys Ser Leu Lys Thr 195 200